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AUTHOR Pettersson, Rune; And Others
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ABSTRACT

A study examined teachers' actual use of media and pictures in their teaching of geography in the secondary schools of five countries (a previous study focused on representations). About 180 teachers from Australia, Greece, Japan, Sweden, and the United States responded to a questionnaire concerning how often they used various types of media or equipment, what kinds of pictures they used, and the reasons for using the pictures. Results indicated that: (1) there was a substantial difference in media use by individual teachers; (2) the blackboard and geography textbooks were used often by teachers in most countries; (3) wall maps are most used in Japan, used weekly in Australia, Sweden, and the United States, and monthly in Greece; and (4) geographical or print media was used much more than audio-visual media. Findings suggest that geography teaching is still very much an oral activity with very little media support. (Six tables of data are included; the questionnaire is attached.) (RS)

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THE USE OF VERBO-VISUAL INFORMATION IN TEACHING OF GEOGRAPHY – VIEWS FROM TEACHERS

by
Rune Pettersson, Nikos Metallinos, Robert Muffoletto, John Shaw and Yasuo Takakuwa

This study is a direct follow-up of our previous study (Metallinos et. al. 1990) on geography textbooks in Australia, Greece, Japan, Sweden and the USA. While the previous study focused on the *representations*, this study focuses on the teachers (*the senders*) and their *actual use* of media and pictures in their teaching of geography in secondary schools in our five countries. For this study we have formulated the following four questions:

- What *kind of media/equipments* are geography teachers using in their teaching of geography?
- What *kind of pictures* are geography teachers using in their teaching of geography?
- What is the *purpose* of using pictures in the teaching of geography?
- Are there some *cultural differences* in the use of media and visual support in the teaching of geography?

Methodology

To get some basic information we developed a questionnaire (enclosed), translated it to our respective languages and send it to secondary school geography teachers. Teachers were asked to answer the questionnaires and return them to a given address. Teachers did not have to sign the forms with their names. The three assignments were:

- *Medium*. In my teaching I use to utilize the following kinds of media/equipments.
- *Picture type*. In my teaching I use to utilize the following kinds of pictures.
- *Purpose*. In my teaching I use to use pictures for the following aims and reasons.

For "Medium" and "Picture type" the teachers could choose between five different alternatives: (1) At least once every lesson, (2) At least once every week, (3) At least once every month, (4) At least once every semester, and (5) Never.

To be able to compare the use of each medium (or picture type) we have ranked the use of media (picture type) and calculated an *index of utilization* (Pettersson, 1991). This index is cal-

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culated in the following way. The frequency of use is multiplied by 0 for "Never" by 1 for "At least once every semester", by 2 for "At least once every month", by 4 for "At least once every week" and by 8 for "At least once every lesson". These values are added and the sums divided by 8. If the teachers never utilize a specific medium the index of utilization is 0. If all the teachers in a sample utilize a medium every lesson the index of utilization is 100. An index-value of 50 means that the medium, on average, is used every week. An index-value of 25 means that the medium, on average, is used every month. An index-value of 12.5 means that the medium, on average, is used every semester.

By adding the index-values for all media it is possibly to compare the "total utilization" of media. The same procedure is applied to picture types. If all teachers in a sample utilize all the different media during every lesson then the "total utilization" is 1700. If no teacher utilize any medium at all during the whole semester, then the value of the "total utilization" is 0. For "total utilization" of pictures the corresponding figures are 900 and 0 respectively.

For "Purpose" the teachers were free to write whatever they liked. These comments were noted and summarized for each country.

Data

For each country the answers from the individual teachers were registered on a form. All teachers did not answer all the assignments. For this reason we calculated the frequence of answers for each variable and then calculated an index of media utilization (table 1) and an index of picture utilization (table 2). The comments on purpose of use of pictures are presented as a listing (table 3).

Table 1. Answers from geography teachers for the assignment "In my teaching I use to utilize the following kinds of media/equipments" (%), calculated index of media utilization and the total utilization of media. (n = number of teachers).

Australia

	at least once every				never	n	index
MEDIUM	lesson	week	month	semester			
black board	67	33	0	0	0	24	83
flip chart	0	0	10	10	81	21	4
textbooks in geography	25	50	17	8	0	24	55
school-atlases	17	67	17	0	0	24	54
other books	17	35	43	4	0	23	46
wall-maps	18	27	23	23	9	22	40
papers and journals	17	50	17	8	8	24	47
wall charts	0	19	38	19	24	21	21
film strips	0	9	0	27	64	22	8
slides	0	11	63	5	21	19	22
OH-transparencies	22	43	26	9	0	23	51
OH-maps	17	0	39	43	0	23	33
film/s	9	17	26	30	17	23	28
(educational) TV	0	10	30	30	30	20	16
video	0	25	46	29	0	24	28
computer software	0	0	14	36	50	22	8
other	0	8	0	0	92	24	4
Total							548

Greece

MEDIUM	at least once every lesson	week	month	semester	never	n	index
black board	40	0	0	0	60	43	40
flip chart *							
textbooks in geography	100	0	0	0	0	43	100
school-atlases	35	16	5	0	44	43	44
other books	26	28	2	0	44	43	40
wall-maps	21	9	0	0	70	43	26
papers and journals	7	5	0	0	88	43	9
wall charts	7	7	2	0	84	43	11
film strips	0	0	16	7	77	43	5
slides	0	7	14	0	79	43	7
OH-transparencies	5	0	0	0	95	43	5
OH-maps*							
film/s	0	2	14	7	77	43	6
(educational) TV	0	0	0	0	100	43	0
video	0	2	7	0	91	43	3
computer software	0	0	0	0	100	43	0
other	0	0	0	0	100	43	0
Total							296

* Flip chart and OH-maps were misinterpreted by the teachers

Japan

MEDIUM	at least once every lesson	week	month	semester	never	n	index
black board	100	0	0	0	0	63	100
flip chart	0	6	17	28	49	47	11
textbooks in geography	98	2	0	0	0	62	99
school-atlases	97	3	0	0	0	63	99
other books	49	23	11	0	18	57	63
wall-maps	65	19	6	3	6	63	76
papers and journals	15	18	35	23	10	62	36
wall charts	22	22	20	18	18	60	40
film strips	0	0	5	0	95	55	1
slides	0	0	15	29	56	55	7
OH-transparencies	14	20	19	20	27	59	31
OH-maps	10	22	12	20	36	59	27
film/s	0	0	5	16	79	56	3
(educational) TV	2	10	14	29	45	58	14
video	2	18	30	22	28	60	21
computer software	0	0	2	0	98	58	1
other	8	0	0	0	92	26	8
Total							637

Sweden

MEDIUM	at least once every lesson	week	month	semester	never	n	index
black board	85	15	0	0	0	40	93
flip chart	0	8	10	5	78	40	7
textbooks in geography	75	25	0	0	0	40	88
school-atlases	33	41	13	3	10	39	57
other books	30	38	28	0	5	40	56
wall-maps	15	55	18	13	0	40	48
papers and journals	3	30	45	15	8	40	31
wall charts	0	5	5	15	74	39	6
film strips	0	15	40	25	20	40	21
slides	0	28	43	23	8	40	27
OH-transparencies	8	25	35	23	10	40	32
OH-maps	0	28	18	30	25	40	22
film/s	0	5	45	33	18	40	18
(educational) TV	0	3	18	33	46	39	10
video	0	3	53	30	15	40	18
computer software	0	0	10	10	80	40	4
other	0	0	0	0	100	40	0
Total							538

USA

MEDIUM	at least once every lesson	week	month	semester	never	n*	index
black board	25	63	0	13	0	8	58
flip chart	13	13	0	13	63	8	20
textbooks in geography	13	38	0	13	38	8	33
school-atlases	0	38	25	25	13	8	28
other books	43	29	29	0	0	7	64
wall-maps	13	75	13	0	0	8	53
papers and journals	13	25	38	13	13	8	36
wall charts	0	25	13	38	25	8	20
film strips	0	13	38	38	13	8	20
slides	0	13	0	0	88	8	6
OH-transparencies	38	0	38	13	13	8	48
OH-maps	13	13	0	0	75	8	19
film/s	13	25	38	13	13	8	36
(educational) TV	0	13	25	50	13	8	19
video	0	13	63	0	25	8	2
computer software	0	25	0	38	38	8	17
other	0	0	100	0	0	1	25
Total							525

* Please note that the number of teachers in this sample is rather low which may influence the quality of the index values

Table 2. Answers from geography teachers for the assignment "In my teaching I use to utilize the following kinds of pictures." (%), calculated index of picture utilization and the total utilization of pictures. (n = number of teachers).

Australia

PICTURE TYPE	at least once every lesson	week	month	semester	never	n	index
words, tables and formulas	33	17	33	8	8	24	51
diagrams and graphs	25	50	25	0	0	24	56
line drawings	0	21	71	8	0	24	29
realistic drawings in color	9	14	50	9	18	22	30
B/W photographs	0	35	26	17	22	23	26
color photographs	5	41	45	9	0	22	38
maps	17	83	0	0	0	24	58
"moving" images	0	19	29	19	33	21	19
other	0	0	0	0	100	24	0
Total							307

Greece

PICTURE TYPE	at least once every lesson	week	month	semester	never	n	index
words, tables and formulas	7	0	0	0	93	43	7
diagrams and graphs	7	26	9	0	58	43	22
line drawings	2	19	2	7	70	43	13
realistic drawings in color	0	0	0	0	100	43	0
B/W photographs	9	7	0	0	84	43	13
color photographs	12	35	7	0	47	43	31
maps	53	47	0	0	0	43	77
"moving" images	0	0	0	0	100	43	0
other	0	0	0	0	100	43	0
Total							163

Japan

PICTURE TYPE	at least once every lesson	week	month	semester	never	n	index
words, tables and formulas	43	9	7	4	37	54	50
diagrams and graphs	43	21	11	2	23	56	57
line drawings	19	6	2	9	64	53	24
realistic drawings in color	9	9	15	4	64	55	18
B/W photographs	21	21	18	9	30	56	34
color photographs	27	34	17	5	17	59	49
maps	60	17	10	3	10	60	69
"moving" images	4	14	27	29	27	56	21
other	0	0	0	0	100	0	0
Total							322

Sweden

PICTURE TYPE	at least once every lesson	week	month	semester	never	n	index
words, tables and formulas	53	26	16	5	0	38	70
diagrams and graphs	13	33	30	23	3	40	39
line drawings	10	23	30	8	30	40	30
realistic drawings in color	3	14	22	27	35	37	18
B/W photographs	11	11	22	36	19	36	27
color photographs	13	15	43	18	13	40	33
maps	33	31	21	15	0	39	56
"moving" images	0	19	49	22	11	37	24
other	0	0	0	0	100	40	0
Total							297

USA

PICTURE TYPE	at least once every lesson	week	month	semester	never	n*	index
words, tables and formulas	13	75	13	0	0	8	53
diagrams and graphs	13	50	38	0	0	8	47
line drawings	0	25	38	25	13	8	25
realistic drawings in color	0	63	13	13	13	8	36
B/W photographs	14	14	43	0	29	7	32
color photographs	13	13	50	25	0	8	34
maps	29	43	14	14	0	7	55
"moving" images	0	0	38	38	25	8	14
other	0	0	0	0	100	8	0
Total							296

* Please note that the number of teachers in this sample is rather low which may influence the quality of the index values

Table 3. Answers from geography teachers for the assignment "In my teaching I use to use pictures for the following aims and reasons":

Australia

Answers from 14 teachers (58%): a picture is worth a thousand words, actuality, authencity, better understanding, difficult to comply with form, for better understanding, for stimulus, originality, real world examples of concepts, reality, students learn more visually than verbally, to arouse interest for reality, to cater for visual learners, to emphasize, to enhance the written word-stimulus for work to be treated in class, to explain, to gain greater comprehension of material, to give relevance to concepts developed, to hold attention, to improve learning, to increase comprehension, to provide illustrations, to provide visual reinforcements, variety, visual comprehension

Greece

Answers from 27 teachers (63%): a picture is a picture is worth a thousand words, pictures stimulate the students to pay closer attention to the teacher's presentation, pictures enrich the teacher's presentation, pictures vivify and enhance the classroom presentation, the use of pictures arouse the student's interest and curiosity about the subject matter, pictures help to break the monotony of the teacher's presentation, pictures provide more knowledge on the subject discussed, and pictures speak louder than words.

Japan

Answers from 33 teachers (52%): for factual realization to get realistic understanding and knowledge (13), to attract interest of students (9), to make images of the area (9), for introduction to new topics, to motivate students, to let students concentrate to the topic, for presentation of common basis for learning, to identify problems to be solved, "seeing is believing", for summarizing the topic.

Sweden

Answers from 19 teachers (63%): authencity, for illustration, for introduction of new areas (2), it is not possible just to read geography, some concepts may not be explained without pictures, to arouse curiosity (2), to arouse interest, to create perspectives, to demonstrate relationships, to demonstrate similarities, to demonstrate, to emphasize (2), to explain difficult concepts, to explain, to illustrate complex information, to improve learning, to increase clarity, to increase comprehension, to minimize abstract matters, to provide illustrations, to show environments, to show places, to show relationships, to supply background in formation.

USA

Answers from 8 teachers (60%): comment learning to real life, help develop background, help students visualize setting, illustrate a point, introduce a new region, make an event or person or place "real" to students, to give students another way of seeing things, to help students visualize and retain information pertaining to US history and Iowa history, to provide visual stimulus for students, and to spark interest

Discussion

First of all we can note that there is a substantial difference between different individual teachers. Some teachers like to utilize media in their teaching, some do not. Obviously a geography lesson may be carried out in many different ways.

As mentioned before the index of utilization is 0 if the teachers never utilize a specific medium. If all the teachers in a sample utilize a medium every lesson the index of utilization is 100. An index-value of 50 means that the medium, on average, is used every week. An index-value of 25 means that the medium, on average, is used every month. An index-value of 12.5 means that the medium, on average, is used every semester. If all teachers in a sample utilize all the different media during every lesson then the "total utilization" is 1700. If no teacher utilize any medium at all during the whole semester, then the value of the "total utilization" is 0.

As we can see from the data above (table 1) and the indexes of media utilization ranked according to the mean values (table 4) many media are seldom used. The *black board* and *textbooks in geography* have the highest rank order. Teachers in Australia, Japan and Sweden use black boards a lot, far more than teachers in Greece and the US. However, the number of teachers in the USA sample is rather small which may influence the quality of the USA index–values. Textbooks in geography are heavily utilized by teachers in Greece, Japan and Sweden. In these countries textbooks are used every, or almost every lesson. In Australia textbooks are used every week. In the USA the teachers, at least in this sample, prefer *"other books"* before the actual textbooks, which are used less than every week.

School-atlases are used every lesson in Japan but only on a weekly basis in Australia, Greece and Sweden. In the USA school-atlases are used about once a month. The utilization of *other books* is rather concentrated around the week. *Wall maps* are most used in Japan, probably on a "every-day-level". In Australia, Sweden and the USA wall maps are used every week, and in Greece every month. *OH-transparencies* are used every week in Australia and the US, every month in Japan and Sweden and every semester in Greece. *Papers and journals* are used every week in Australia, every month in Japan, Sweden and the US, and every semester in Greece.

All the other media, OH-maps, wall-charts, films, video, slides, educational TV, film strips, flip charts and computer software are all used once every month or once every semester.

The total media utilization is on about the same low level in Australia, Sweden and the USA, which is considerably more than Greece and less than Japan.

Table 4. Index of media utilization, ranked according to mean values.

MEDIUM	Country Australia	Greece	Japan	Sweden	USA	m
black board	83	40	100	93	58	75
textbooks in geography	55	100	99	88	33	75
school-atlases	54	44	99	57	28	56
other books	46	40	63	56	64	54
wall-maps	40	26	76	48	53	49
OH-transparencies	51	5	31	32	48	33
papers and journals	47	9	36	31	36	32
OH-maps	33	–	27	22	19	25
wall charts	21	11	40	6	20	20
film/s	28	6	3	18	36	18
video	28	3	21	18	2	14
slides	22	7	7	27	6	14
(educational) TV	16	0	14	10	19	12
film strips	8	5	1	21	20	11
flip chart	4	–	11	7	20	11
computer software	8	0	1	4	17	6
other	4	0	8	0	25	6
Total	548	296	637	538	504	505*

* Calculated on the country totals. The means for each medium are approximations.

The indexes of media utilization of flip charts and computer software are very low in Australia. The indexes of media utilization of OH-transparencies, films, video, slides, educational TV, film strips, flip-charts and computer software are very low in Greece. The indexes of media utilization of films, slides, film strips, and computer software are very low in Japan. The indexes of media utilization of wall charts, flip charts and computer software are very low in Sweden. The indexes of media utilization of video and slides are very low in the US.

In all countries graphical media or print media are much more used than AV-media. This difference is obvious if we group the media (table 5). The use of printed media is especially important in Greece where the use of print media is 13 times the use of OH-transparencies, OH-maps, slides, and film strips ("AV-media, stills"), and Japan where this ratio is six times.

Table 5. Index of media utilization for groups of media.

MEDIUM	Country Australia	Greece	Japan	Sweden	USA	m
Hand made drawings[1]	87	40	111	100	78	83
Print media[2]	263	230	413	286	234	285
AV-media, stills[3]	114	17	66	102	93	78
AV-media, "moving images" [4]	72	9	38	46	57	44
Other[5]	12	0	9	4	42	13
Total	548	296	637	538	525	508

1, black board and flip chart; 2, textbooks in geography, school-atlases, other books, wall-maps, papers and journals, and wall charts; 3, OH-transparencies, OH-maps, slides, and film strips; 4, film/s, video, and (educational) TV; and 5, computer software, and other

As with media we can note that there is a substantial difference between different individual teachers use of pictures. Some teachers like to utilize pictures in their teaching, some do not.

If all teachers in a sample utilize all the different pictures during every lesson then the "total

utilization" is 900. If no teacher utilize any pictures at all during the whole semester, then the value of the "total utilization" is 0. As we can see below (table 6) *maps* are obviously used to a large extent by geography teachers. Maps are used at least every week. The teachers in Greece probably use maps on a "daily basis". Pictures with *words, tables and formulas* are used every week in all countries except Greece. Here this type of visual is used at least once every semester. It is almost the same with *diagrams and graphs*.

Color photographs are used every week in Japan but less often in the other countries. On a lower level the same pattern is true for the *B/W photographs* and the *line drawings*. On average these types are used every month. *Realistic drawings in color* are used every month in all countries except Greece, where they are not used at all. Is is the same pattern, on a lower level, for *"moving images"*. The total picture utilization is on about the same low level in Australia, Japan, Sweden and the US, which is considerably more than Greece.

Table 6. Index of picture type utilization, ranked according to mean values

	Country					
PICTURE TYPE	Australia	Greece	Japan	Sweden	USA	m
maps	58	77	69	56	55	63
words, tables and formulas	51	7	50	70	53	46
diagrams and graphs	56	22	57	39	47	44
color photographs	38	31	49	33	34	37
B/W photographs	26	13	34	27	32	26
line drawings	29	13	24	30	25	24
realistic drawings in color	30	0	18	18	36	20
"moving" images	19	0	21	24	14	16
other	0	0	0	0	0	0
Total	307	163	322	297	296	277

From table 3 (See Data) it is clear that teachers have many different purposes of using pictures in the teaching of geography. "A picture is worth a thousand words" were mentioned by several teachers.

Regardless of the rapid development of technology during the past years only the black board, printed books and maps are popular media in the classrooms. We can conclude that in all countries teaching still is very much an *oral activity* with very little media support. The possibilities offered by new information technology is not yet utilized. The results from this study suggests that the use (or non-use) of media in classrooms should be discussed and further studied. Is it really important to use media in the classrooms? If the answer is yes we should ask ourselves what we can do to increase the use of media?

References

Metallinos, N., Muffoletto, R., Pettersson, R., Shaw, J. and Takakuwa, Y. (1990). *The use of Verbo-visual Information in Textbooks – a cross-cultural experience*. Paper presented at the International Visual Literacy Association Symposium 1990. Verbo-Visual Literacy. Mapping the Field. July 10-13. University of London, Institute of Education.

Pettersson, R. (1991). Användning av bilder i undervisning. (Use of pictures in education). *Forskning om utbildning. Tidskrift för analys och debatt*. In press.

Use of pictures in the teaching of geography

– views from teachers

This study of the use of pictures in the teaching of geography in secondary schools is carried out among teachers in Australia, Greece, Japan, Sweden and the USA. Please answer the following questions and then return this form to (x) . You don't have to sign with your name. Thank you very much for your help.

(x = the individual researchers)

Gender. I am female male **Age.**_____

Medium. In my teaching I use to utilize the following kinds of media/equipments

Medium	at least once every lesson	week	month	semester	never
black board					
flip chart					
textbooks in geography					
school-atlases					
other books					
wall-maps					
papers and journals					
wall charts					
film strips					
slides					
OH-transparencies					
OH-maps					
film/s					
(educational)TV					
video					
computer software					
other:					

Picture type. In my teaching I use to utilize the following kinds of pictures.

Picture type	at least once every lesson	week	month	semester	never
words, tables and formulas					
diagrams and graphs					
line drawings					
realistic drawings in color					
B/W photographs					
color photographs					
maps					
"moving" images					
other:					

Purpose. In my teaching I use to use pictures for the following aims and reasons: